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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Robert Elliott Robotham

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EXAMINER

SAM, PHIRIN

ART UNIT

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2619

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DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/760,624	ROBOTHAM, ROBERT ELLIOTT	
	Examiner	Art Unit	
	Phirin Sam	2619	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 December 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-19 are rejected under 35 U.S.C. 102(e) as being anticipated by US Patent 7,280,542 (hereinafter referred as “Hassan-Ali”).

Regarding claims 1 and 16, Hassan-Ali discloses an apparatus for multicasting data comprising:

- (a) a queuing element for receiving the data and for transmitting the data to a plurality of multicast destinations via a plurality of destination queues (see Figs. 3 and 4, col. 9, lines 20-41);
- (b) a memory subsystem for storing the data, queue context information pertaining to a root connection, data context information pertaining to the data, a data element pointer, and a leaf to be processed pointer (see Figs. 3 and 4, elements 322, 332, 334, 336, 352, and 354, col. 8, lines 19-52, and col. 9, lines 12-41);
- (c) a scheduler for scheduling a dequeuing event for the data (see Figs. 3 and 4, element 310, col. 7, lines 48-56, and col. 9, lines 52-58).

Regarding claim 17, Hassan-Ali discloses the memory subsystem comprises:

- (a) a data memory for storing the data (see Fig. 3, element 332, col. 8, lines 25-26, and col. 9, lines 48-52);

- (b) a queue context block for storing queue context information for each of the destination queues (see Fig. 3, element 334, col. 8, lines 26-31);
- (c) a data context block for storing data context information for each of the data elements of the data (see Fig. 3, col. 8, lines 26-31);
- (d) a to-do list for storing the data element pointer and the leaf to be processed pointer (see Fig. 3, element 352, col. 8, lines 36-43).

Regarding claim 18, Hassan-Ali discloses the data context information comprises:

- (a) a copy count for counting events of transmitting the data (see Fig. 3, col. 10, lines 18-19);
- (b) a next data element pointer for indicating a next data element of the data to be processed (see Figs. 3 and 5, col. 11, lines 42-57).

Regarding claim 19, Hassan-Ali discloses the queue context information comprises:

- (a) a head pointer (see Fig. 5, col. 11, lines 22-23);
- (b) a tail pointer (see Fig. 5, col. 11, lines 22-23);
- (c) a root pointer (see Fig. 5, col. 11, lines 38-41).

Regarding claim 20, Hassan-Ali discloses the to-do list further comprises a leaf count for counting destination queues to which the data shall be transmitted (see Figs. 4 and 5, col. 9, lines 28-34, and col. 10, lines 43-45).

Regarding claim 2, Hassan-Ali discloses the method further comprising updating the leaf to be processed pointer in the to-do list for each instance of scheduling the data to be output to each of the leaves (see Fig. 4, col. 10, lines 62-65).

Regarding claim 3, Hassan-Ali discloses the method further comprising setting a copy count to an initial value (see Fig. 4, col. 10, lines 62-65); adjusting the copy count based on a number of actual copies made (see Fig. 4, col. 10, lines 43-45, 65-67, and col. 11, lines 1-21).

Regarding claim 4, Hassan-Ali discloses the step of setting the copy count to the initial value further comprises setting the copy count to a maximum value initially, and wherein the step of adjusting the copy count further comprises decrementing the copy count for each of the actual copies made (see Fig. 4, col. 10, lines 43-45, 62-67, and col. 11, lines 1-21).

Regarding claim 5, Hassan-Ali discloses the step of adjusting the copy count is performed in response to the step of scheduling the data to be output to each of the leaves of the multicast tree (see Fig. 4, col. 10, lines 65-67, and col. 11, lines 1-21).

Regarding claim 6, Hassan-Ali discloses the step of scheduling the data to be output to each of the leaves of the multicast tree further comprises counting every one of the leaves of the multicast tree (see Fig. 4, col. 10, lines 35-45).

Regarding claim 7, Hassan-Ali discloses the step of adjusting the copy count is performed based on reaching a leaf to be processed pointer that points to itself (see Figs. 4-6, col. 10, lines 62-67, col. 11, lines 1-7, and col. 12, lines 2-14).

Regarding claim 8, Hassan discloses a method for multicasting data comprising:

- (a) adding the data to a queue as enqueued data (see Fig. 3, col. 8, lines 25-26);
- (b) transmitting the enqueued data to each of a plurality of multicast destinations (see Figs. 3 and 4, col. 9, lines 20-41);
- (c) determining that all of the enqueued data for a particular destination of the multicast destinations have been transmitted (see Figs. 3 and 4, col. 9, lines 42-66).

Regarding claim 9, Hassan-Ali discloses a method for multicasting data comprising:

- (a) storing queue context information and data context information pertaining to the data (see Fig. 3, element 334, col. 8, lines 19-33);
- (b) determining which of the data to transmit as output data and a destination to which it shall be transmitted based on the queue context information and the data context information; transmitting the output data to the destination (see Figs. 3 and 4, col. 8, lines 53-67, and col. 9, lines 1-11);
- (c) determining a number of destinations to which the output data has been transmitted (see Figs. 3 and 4, col. 8, lines 53-67, and col. 9, lines 1-11).
- (d) determining a number of destinations intended to receive the output data (see Figs. 3 and 4, col. 10, lines 35-67, and col. 11, lines 1-7).

Regarding claim 10, Hassan-Ali discloses the method further comprising when the number of destinations to which the output data has been transmitted indicates that the output data has been transmitted to the number of destinations intended to receive the output data, concluding the queuing of the output data (see Figs. 3-5, col. 11, lines 29-57).

Regarding claim 11, Hassan-Ali discloses the method further comprising updating the queue context information for a root connection (see Fig. 3, col. 10, lines 14-24).

Regarding claim 12, Hassan-Ali discloses the method further comprising obtaining a data element pointer and a leaf to be processed pointer from a to-do list, wherein the step of determining which of the data to transmit as the output data is based on the data element pointer and the leaf to be processed pointer (see Figs. 3-6, col. 11, lines 29-67, and col. 12, lines 1-14).

Regarding claim 13, Hassan-Ali discloses the method further comprising updating a number of leaves counter (see Fig. 3, col. 10, lines 63-67, and col. 11, lines 1-7).

Regarding claim 14, Hassan-Ali discloses the method further comprising adjusting a copy count, wherein the copy count is used to determine the number of destinations to which the output data has been transmitted (see Fig. 3, col. 10, lines 63-67, and col. 11, lines 1-19).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 7,280,542 (hereinafter referred as “Hassan-Ali” in view of US Patent 6,621,825 (herein after referred as “Walsh”).

Regarding claim 15, Hassan-Ali does not disclose the step of adjusting the copy count further comprises decrementing the copy count for each of the number of destinations to which the output data has been transmitted, wherein the copy count had been initialized to a maximum value. However, the step of adjusting the copy count further comprises decrementing the copy count for each of the number of destinations to which the output data has been transmitted, wherein the copy count had been initialized to a maximum value (see Figs. 4-6 and 11, col. 6, lines 24-42, and col. 11, lines 29-43). At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the decrementing the copy count for each of the destination teaching by Walsh with Hassan-Ali. The motivation for doing so would have been to

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provide to update queuing pointers for each destination and ensures proper dequeuing of received data burst read on column 1, lines 49-51. Therefore, it would have been obvious to combine Walsh and Hassan-Ali to obtain the invention as specified in the claim 16.

Response to Arguments

5. Applicant's arguments with respect to claims 1-11 and 16-20 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

(1) US Patent 6,850,522 (Hasegawa et al) discloses packet buffer device and packet switching device.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phirin Sam whose telephone number is (571) 272-3082. The examiner can normally be reached on Increased Flexitime Policy (IFP) Program.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel can be reached on (571) 272 - 2988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Respectfully submitted,

Date: March 21, 2008

By: /Phirin Sam/
Primary Examiner, Art Unit 2619